

**STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
Honolulu, Hawaii**

180-Day Exp. Date: July 8, 2008

May 09, 2008

**Board of Land and
Natural Resources
State of Hawaii
Honolulu, Hawaii**

REGARDING: Amendment to Related Conservation District Use Permit
OA-2670, Condition #17

Conservation District Use Application (CDUA) OA-3450
for the Establishment of the Kalaeloa Artificial Reef and
the Emplacement of the First Increment of Reef-Building
Material

APPLICANT: Division of Aquatic Resources (DAR)
Department of Land and Natural Resources

LANDOWNER: State of Hawaii

LOCATION: Submerged Lands, Ewa, Oahu

USE: approximately (\approx) 108-acre

SUBZONE: Resource

BACKGROUND:

This CDUA is being submitted to fulfill condition #17 of Conservation District Use Permit (CDUP) OA-2670 for the dredging of the Hoakalei Marina. In 2000, the Board of Land and Natural Resources (Board) issued CDUP OA-2670 to HASEKO for the construction of an entrance channel to the Hoakalei Marina (then known as Ewa Marina) **(Exhibit 1)**. Condition #17 of CDUP OA-2670 states: *The applicant shall construct and maintain for a specified period of time as determined by the Department, an artificial reef subject to review and approval by the department. Prior to the construction of an artificial reef, the applicant shall apply for, and obtain a Conservation District Use Permit.*

In addition, the Department of the Army (DA) Permit condition #13 also requires HASEKO to construct an artificial reef in the vicinity of the Marina to offset impacts to coral-reef habitat associated with construction of the entrance channel to the Marina. The size of the artificial reef required to mitigate the impacts of the entrance channel was calculated to be 1.1 acres, as explained in the Army Record of Decision for the DA Permit.

In the years since these conditions were established, the scientific understanding of artificial reefs has moved forward significantly, and most scientists currently believe that an artificial reef with a surface area of approximately 1.1 acres would not be sufficient to create useful coral-reef habitat. Rather, a structure or aggregate of seafloor structures with a total surface area of this size would function primarily as a fish aggregation device. As such, it would tend to concentrate fish near the structures without providing productive habitat for community growth.

Because a stand-alone entity of approximately 1.1 acres would be undesirable, it was believed that it would not be possible to obtain the requisite permits for such an artificial reef. HASEKO, therefore, committed to an alternative agreement to fulfill its obligations under both CDUP OA-2670 and the DA Permit. The alternative agreed upon was for the eventual establishment of an artificial reef that would be close to 100 acres in size that would be designed, constructed, and maintained by the Department's Division of Aquatic Resources (DAR). HASEKO would be responsible for (1) identifying a suitable site for the artificial reef, (2) preparing the necessary applications and support documentation for permitting the artificial reef site, and (3) providing funds for the construction for the first increment of reef construction (up to \$150,000.00). The alternative agreement was memorialized in a Memorandum of Agreement (MOA) with the U.S. Army Corps of Engineers, HASEKO, and DAR signed in 2004 (**Exhibit 2**).

AMENDMENT TO CDUP OA-2670 CONDITION #17

As currently written, Condition #17 could be interpreted as not being in sync with the MOA inasmuch as under the MOA, DAR will be constructing and maintaining the artificial reef. Condition #17 of CDUP OA-2670 should be amended to require compliance with the MOA as the MOA establishes the best plan for addressing the Board's requirement for an artificial reef as mitigation for the marina entrance channel while taking into account current understanding concerning the optimum size of artificial reef habitat.

Staff proposes that Condition #17 of CDUP OA-2670 be amended to read as follows:

The applicant shall comply with the terms of the Memorandum of Agreement among HASEKO (Ewa), Inc., the U.S. Army Corps of Engineers, Pacific Ocean Division, and the State of Hawaii Department of Land and Natural Resources Division of Aquatic Resources, effective October 21, 2004, which establishes certain commitments upon the parties relating to the construction of an artificial reef to offset impacts to coral-

reef habitat associated with construction of the entrance channel to the marina.

Staff believes that the MOA satisfies condition #17 of CDUP OA-2670. Thus, Staff has no objections to the proposed amendment.

DESCRIPTION OF AREA AND CURRENT USE

The approximately (\approx) 108-acre project area exists on submerged lands of Oahu within the Resource subzone of the Conservation District. The site is more than a mile offshore of the former Barber's Point Naval Station at Kalaeloa, west of the Honouliuli sewer outfall and east of the oil tanker offshore unloading facilities. The proposed site is located within an underwater military installation (**Exhibit 3 & 4**).

The water depth ranges from 65-feet along the northern site boundary to 122-feet at the southeastern site corner. The mean depth of seafloor within the site is 98.7-feet. The Bathymetric (underwater topography) maps of the Kalaeloa area illustrates that the seafloor is comprised of a series of relatively broad, often sand-covered, wave-cut terraces in the nearshore region. 95% of the relatively flat gently sloping site consists of bare limestone substrate with a lack of forage and shelter for marine species. Coral covers less than 2% of the entire site, and the abundance and diversity of marine life is low.

It is unlikely that marine species of concern (e.g. sea turtles, humpback whales, monk seals) currently utilize the site for anything other than passing through the area. No shipwrecks have been located within the vicinity and it is believed that no cultural or archaeological remains are likely to be identified within the project area.

As part of the Department of the Army Permit, site selection and design must meet the following criteria: relatively flat hard bottom; water depths from 60-90 feet; located outside lanes of shipping and pleasure craft traffic; location devoid of live coral; location in a benthic community with appropriate forage for the fishes expected to be resident to the reef; materials and design which would provide a 40-year life expectancy and high stability as ascertained by a qualified engineer; and a navigation safety clearance of a minimum of 40 feet of water above the highest point of the artificial reef.

PROPOSED USE

The proposed use is to establish the approximately (\approx) 108-acre seafloor site to be utilized for long-term emplacement of artificial reef structures for fisheries enhancement and recreational use. Additional increments of similar design to the Z-block shall be deployed over time to create a large reef habitat area. The maximum theoretical build-out would be 70 sets of artificial reef structures within the proposed established area. \approx 12 acres or 11% of the seafloor within the project area would be covered with the Z-block modules. Actual placement of the sets would depend upon individual site surveys to confirm appropriate seafloor types.

The proposed first increment of deployment shall consist of a minimum of two 'sets' of concrete Z-block modules ($\approx 8' \times 4'$) placed 50-100 feet apart that will cover about 8,000 square feet of seafloor. The proposed design has been well tested and has produced successful artificial reefs in other areas (6, 7, 8 & 9).

The reef modules have been constructed and consist of clean concrete that shall be washed down prior to deployment. Deployment of the modules could stir up what small amounts of bottom sand that exist at the site, however the sand would settle. Deployment will be accomplished by stationing a barge used to transport the modules above the intended location and using a front-end loader to push the modules off the barge. The barge will be held in place as precisely as possible so that the individual blocks will form a pile (set) on the seafloor. A total of 700-800 blocks will be used for the first increment.

It is anticipated that one or two mooring buoys for boats to anchor shall be installed with the first increment proposal. The buoys will be attached to the Z-blocks and deployed as part of the initial reef sets. The buoys will be inspected and maintained as needed during DAR's periodic monitoring of the reef's marine life.

Pre-deployment surveys will be conducted to ensure existing corals are avoided when possible. The first increment would provide shelter and elevated surface area needed for coral and benthic marine community development. Corals are expected to colonize much of the new reef substrate over time, potentially resulting in a several-fold increase in coral coverage over current conditions. The shelter provided by the reef may also increase the abundance and diversity of other marine life.

With the proposed first reef increment, the maximum relief from the seafloor would increase from a few inches to more than 10-feet. There would not be a measureable effect on surface waves at the Kalaeloa shoreline and near shore. The proposal is not expected to impact water temperature nor water quality. Effects to air quality and climate would be minor and temporary.

The artificial reef is not expected to exacerbate existing natural hazards. The proposed Z-block modules selected for the project have exhibited good stability when exposed to storm waves.

Deployment of the artificial reef is expected to lead to substantial local increases in the abundance and diversity of fishes over current conditions. It is anticipated the artificial habitat shall enhance scenic and aesthetic qualities of the underwater seascape by attracting colorful reef-dwelling fish and other organisms.

The first increment would provide shelter and elevated surface area needed for marine community development. Recreational use of the reef site is expected to diversify and intensify. It will most likely become a known point of interest among divers and fishermen, as well as a potential site for research and educational activities. While recreational use of the reef poses some risks to users and to the reef itself, overall it is anticipated to greatly benefit recreational users as well as marine communities.

Although there is no indication that the site has significant cultural resources, in the event that archaeological resources are encountered at the site during preconstruction surveys, the State Historic Preservation Division shall be notified.

The proposed reef site is well removed from public facilities and except during brief periods when reef elements are being deployed, vessels are temporarily precluded from entering the immediate area. Other than these brief moments, navigation in the area will not be constrained. DAR will also require recreational vessels to moor to permanent buoys rather than anchoring on the bottom to avoid damage to the reef.

The State of Hawaii began artificial reef development in the late 1950's to increase and enhance fishing opportunities. Regarding this particular artificial reef, the purpose of the artificial reef was to compensate for the loss of 1.1 acres of reef surface area from the excavation of the Hoakalei Marina. However, through the years, scientific understanding of the ecology of artificial reefs has improved and it is believed that rather than creating a stand alone equal area replacement reef, the development of a larger artificial reef complex would be much more beneficial as the larger habitat area would be less vulnerable to over fishing and would do more to replenish over-exploited fish species.

Alternatives

Should the process of permitting an artificial reef prove to be infeasible then DAR would utilize committed funding for the first reef increment to directly benefit marine habitat along Oahu's leeward coast. The designated funding may be applied to the existing Waianae Artificial Reef, or towards another project that would enhance recreational fishing opportunities of the Ewa coast.

The no action alternative would be unwise, as it would violate the terms of CDUP OA-2670 and the 2004 MOA of the Department of the Army Permit.

SUMMARY OF COMMENTS

CDUA OA-3450 was referred to the following agencies for their review and comment: the Federal-US Fish & Wildlife Service, the National Marine Fisheries Service, the U.S. Coast Guard, the Army Corps and the Department of the Navy; the State: Department of Land and Natural Resources Divisions of: Boating and Ocean Recreation, Conservation & Resource Enforcement, and the Oahu District Land Office; the Department of Health, the Office of Hawaiian Affairs, the Office of Environmental Quality Control; the City & County of Honolulu's Department of Planning and the Ewa Neighborhood Board. In addition, the CDUA was also sent to the nearest public library, the Ewa Public Library, to make this information readily available to those who may wish to review it.

Comments were received by the following agencies and summarized by Staff as follows:

UNITED STATES OF AMERICA

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Services

The proposed project will require a U.S. Army Corps of Engineers Section 404 permit. We recommend that the USFWS standard Best Management Practices be incorporated into the project to minimize the degradation of water quality and impacts to fish and wildlife resources.

In general, the Service discourages placement of material in the marine environment in areas that support coral growth. However, since the proposed project aims to create substrate for coral recruitment as well as habitat for reef fishes and marine invertebrates, we would support the project as long as it is designed to avoid or minimize impacts to marine resources to the greatest extent possible.

We recommend that DLNR confirm that placement of the Z-blocks and mooring buoys to construct the artificial reefs will cause minimal negative impact to the reef substrate and biota. We also recommend that increased user conflicts be addressed through State regulation of the underwater installation. If these structures are intended to be Fish Aggregation Devices (FADs), more recreational fishermen and divers will likely be attracted to the area that currently has no enforcement present. Provided that these measures are incorporated into the project, we would agree that the proposed action should not result in significant adverse impacts to fish and wildlife resources at the site and would support approval of the CDUA.

Regarding full reef build-out, as the current EIS only includes the designation of the first increment, impacts of subsequent increments to the site should require a formal assessment when proposed. Regarding enforcement, due to the proximity to the new Ocean Point Marina, we recommend that DLNR place restrictions on use of the area, prohibit bottom anchoring at the site, and have personnel designated to enforce these rules.

Regarding mooring buoys and the anchor installation, impacts from mooring buoys and associated anchors are not examined. We recommend that an estimated number of permanent mooring buoys, their locations within the site, and their impacts to the substrate be included in the final analysis. We recommend DLNR ensure that no corals or other benthic marine life in the area are harmed by monitoring the installation of all mooring buoys. We recommend that a regularly scheduled buoy maintenance program be established in order to minimize the likelihood that an anchor line will break free and damage the marine environment as the free end whips around the ocean floor.

Regarding monitoring of artificial reefs, we recommend a monitoring program be established for each Z-block installation that tracks the succession and settlement off

organisms and reef fish diversity, density and biomass. Data collected will provide guidance for the future installation of additional Z-block reefs in the designated area.

Applicant's response

The impact analysis presented in the Final EIS confirms that the placement of the concrete structures and mooring buoys will cause minimal negative impact to the reef substrate and biota. DAR will also implement Best Management Practices during deployment. User conflicts will be minimized through State regulations.

As full build out shall occur over a period of 10-20 years and the proposed materials and reef configuration may change subject to advances in technology and research, DAR shall submit pre-deployment notifications for subsequent reef increments to the Department of the Army, State Department of Health and other government agencies for review.

A primary objective of the artificial reef program is to increase fishing opportunities for the recreational fisherman. If the new reef becomes too popular and user conflicts become a problem, restrictions could be placed on the use of the area. DAR also has an agreement with the Navy that DAR shall install mooring buoys and that anchoring shall be prohibited. The Division of Conservation and Resource Enforcement (DOCARE) shall handle enforcement of DAR regulations.

As stated in the FEIS, pre-deployment surveys will ensure that the modules will be deployed only on seafloor that is devoid of coral and benthic marine life. Divers shall attach the buoys directly to the reef sets by shackling a galvanized chain around several Z-blocks. The reef set locations shall correspond to the mooring buoy locations. Because the mooring buoys will not come into contact with the seafloor, there will be no impacts to the substrate. The mooring buoys will be inspected and maintained as needed during the periodic monitoring of the reefs marine life.

DAR currently has a monitoring program in place for its artificial reefs. DAR surveys artificial reefs periodically to obtain information on fish abundance and diversity. DAR intends to monitor the proposed Kalaeloa Artificial reef most likely more frequent surveys may be conducted as part of a proposed project to document colonization of the new artificial reef.

DEPARTMENT OF THE NAVY

The proposed artificial reef site is located within a military restricted area. Use of the area is noted on navigational charts as being limited. Boating within the area is authorized, but anchoring and fishing operations that may foul the underwater installations within the area are prohibited. The Navy continues to operate, through the Office of Naval Research, a live electrical cable within this restricted area that carries lethal voltage should the cable be damaged or disturbed. We find no objection to the proposed artificial reef, provided the following conditions are met:

- The artificial reef shall maintain a minimum distance of 500 meters from any portion of the underwater navy cable to prevent damage to the cable;
- Restrictions, as defined under C.F.R. 334.1400 shall remain in effect. Mooring buoys shall be installed and anchoring prohibited within said area;
- Future users of the marina and artificial reef shall be informed of the location, restrictions and potential hazards relative to the existing military training areas and associated with the Navy cable.

The Navy finds that the proposed artificial reef will not be materially detrimental to public health, safety, and welfare. We reiterate that there may be potential risks associated with placing this recreational attraction in proximity to the active Navy cable. Any liability generated from introducing this new use to the area would rest with the State of Hawaii and not the United States Government or the Navy.

Applicant's response

DAR has coordinated with the Navy to ensure that: the reef site boundaries were revised so that no portion of the underwater navy cable is less than 500 meters from the artificial reef site; Restrictions defined under C.F.R.334.1400 will remain in place. Anchoring will be prohibited at the proposed artificial reef and potential users of the artificial reef will be informed of the location, restrictions, and potential hazards present in the area.

By prohibiting anchoring in the area, informing users of risks, and siting reef sets at least 500 meters from the Navy cable, DAR is confident that risks to reef users will be minimized. Increased user traffic in the area resulting from planned and approved development remains an issue for which the State cannot reasonably accept full liability.

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

Boating and Ocean Recreation (DOBOR)

No comments

Oahu District Land Office (ODLO)

The proposed establishment of the offshore Kalaeloa Artificial reef would require a written request from the Division of Aquatic Resources that a Governor's Executive Order be processed to establish the jurisdiction and maintenance of the reef to be under the Division of Aquatic Resources.

Applicant's Response

DAR shall prepare a letter to request setting aside the area through Governor's Executive Order to DAR for the jurisdiction and maintenance of the reef.

OFFICE OF HAWAIIAN AFFAIRS (OHA)

OHA is generally is hesitant to support projects that include additions to the sea floor particularly because submerged lands are ceded lands and any change to the sea floor can have a ripple effect throughout an area that our beneficiaries frequently use for a variety of cultural and traditional practices. However, as 98% of the bottom currently has no coral and that future stocks of both coral and fish are expected to improve, this project may have a beneficial effect to our beneficiaries and therefore we offer our support for this project.

We note that future reef increments shall require DAR approval as well as the Department of the Army review and State Department of Health compliance. Regarding enforcement at the project site, OHA recommends that restrictions be placed on anchoring types and funding be provided so that enforcement and compliance with these and other rule can realistically be achieved.

Applicant's Response

As full build out shall occur over a period of 10-20 years and the proposed materials and reef configuration may change subject to advances in technology and research, DAR shall submit pre-deployment notifications for subsequent reef increments to the Department of the Army, State Department of Health and other government agencies for review.

A primary objective of the artificial reef program is to increase fishing opportunities for the recreational fisherman. If the new reef becomes too popular and user conflicts become a problem, restrictions could be placed on the use of the area. DAR also has an agreement with the Navy that DAR shall install mooring buoys and that anchoring shall be prohibited. The Division of Conservation and Resource Enforcement (DOCARE) shall handle enforcement of DAR regulations.

ANALYSIS

After reviewing the application, the Department has found that:

1. The proposed use is an identified land use in the Resource subzone of the Conservation District, pursuant to §13-5-24, Hawaii Administrative Rules (HAR), R-2 ARTIFICIAL REEFS. Please be advised, however, that this finding does not constitute approval of the proposal;
2. Pursuant to §13-5-40 of the HAR, a Public Hearing will be required;

3. In conformance with Chapter 343, Hawaii Revised Statutes (HRS), as amended, and Chapter 11-200, HAR, the Final Environmental Impact Statement has been reviewed and accepted by the Department on October 24, 2007 and notice was published in the November 23, 2007 issue of the Environmental Notice.
4. The proposed project is located makai of the certified shoreline and as such, is outside of the Special Management Area.

A Public Hearing was scheduled for March 19, 2008 at 6 pm at the Kalanimoku Building. No one from the general public attended the Public Hearing.

CONSERVATION CRITERIA

The following discussion evaluates the merits of the proposed land use by applying the criteria established in Section 13-5-30, HAR.

1. *The proposed land use is consistent with the purpose of the Conservation District.*

The objective of the Conservation District is to conserve, protect and preserve the important natural resources of the State through appropriate management and use to promote their long-term sustainability and the public health, safety, and welfare.

The project is considered an identified land use in the subject area of the Conservation District; as such, it is subject to the regulatory process established in Chapter 183C, HRS and detailed further in Chapter 13-5, HAR. This process provides for the application of appropriate management tools to protect the relevant resources, including objective analysis and thoughtful decision-making by the Department and Board of Land and Natural Resources.

The proposed artificial reef is expected to improve public recreation and educational opportunities, enhance fish stocks and create habitat for corals and other reef-dependent organisms.

2. *The proposed land use is consistent with the objectives of the subzone of the land on which the use will occur.*

The objective of the Resource subzone is to develop, with proper management, areas to ensure sustained use of the natural resources of those areas. Staff believes the proposal is consistent with the objectives of the Resource subzone as the proposed artificial reef is intended to conserve and enhance existing fish stocks and coral reef habitat for biological, recreational, and educational purposes.

3. *The proposed land use complies with provisions and guidelines contained in Chapter 205A, HRS, entitled "Coastal Zone Management," where applicable.*

Staff believes that the proposed use complies with the Chapter 205A, HRS by providing coastal recreational opportunities and by promoting the protection, use and development of marine and coastal resources to assure their sustainability.

4. *The proposed land use will not cause substantial adverse impacts to existing natural resources within the surrounding area, community, or region.*

Staff believes the proposed land use will not cause substantial adverse impacts to existing natural resources within the surrounding area, community or region. The proposed land use does not change the existing use of the area. The proposed artificial reef is intended to conserve and enhance existing fish stocks and coral reef habitat.

5. *The proposed land use, including buildings, structures and facilities, shall be compatible with the locality and surrounding area, appropriate to the physical conditions and capabilities of the specific parcel or parcels.*

Staff believes the proposal shall be compatible with the locality and surrounding area. The project site is relatively flat, barren substrate mostly devoid of corals and other marine life.

6. *The existing physical and environmental aspect of the land, such as natural beauty and open space characteristics, will be preserved or improved upon, which ever is applicable.*

The existing underwater landscape at the proposed site is relatively flat and devoid of marine life. The proposed reef shall add structural relief that will attract a diversity of fish and marine organisms.

7. *Subdivision of the land will not be utilized to increase the intensity of land uses in the Conservation District.*

There will be no subdivision of land for this proposed project.

8. *The proposed land use will not be materially detrimental to the public health, safety and welfare.*

Staff believes that the proposed use shall not be materially detrimental to the public health, safety and welfare. However Staff notes the artificial reef shall create an offshore recreational resource that like all offshore uses, poses inherent safety risks to users. Staff believes individual users are responsible for their own well-being.

DISCUSSION

Staff believes condition #17 of CDUP OA-2670 should be amended to require compliance with the Department of the Army's permit's MOA as the MOA establishes the best plan for addressing the Board's requirement for an artificial reef as mitigation for the marina entrance channel while taking into account current understanding concerning the optimum size of artificial reef habitat. The MOA completely satisfies condition #17 of CDUP OA-2670.

Artificial reefs are attempts to replicate naturally productive habitats in relatively unproductive locations. Population growth has exerted pressure on fish stocks and advanced technology has given commercial fisherman the ability to effectively exploit many coral reef fish species. Land based activities such as industrial and agricultural operations; stormwater runoff, harbor dredging and infill contribute to the decimation of our fisheries and degradation of our nearshore waters. The artificial reef program is one tool that could be utilized to rejuvenate our ocean resources.

The State of Hawaii began artificial reef development in the late 1950's to increase and enhance fishing opportunities. Regarding this particular artificial reef, the purpose of the artificial reef was to compensate for the loss of 1.1 acres of reef surface area from the excavation of the Hoakalei Marina. However, through the years, scientific understanding of the ecology of artificial reefs has improved and it is believed that rather than creating a stand alone equal area replacement reef, the development of a larger artificial reef complex would be much more beneficial as the larger habitat area would be less vulnerable to over fishing and would do more to replenish over-exploited fish species.

Although the proposed site is within an underwater military installation, the Navy has concluded that the proposed artificial reef would not interfere with Navy operations. DAR has coordinated with the Navy to ensure that: the reef site boundaries were revised so that no portion of the underwater navy cable is less than 500 meters from the artificial reef site; Restrictions defined under C.F.R.334.1400 will remain in place, that anchoring will be prohibited at the proposed artificial reef, and potential users of the artificial reef will be informed of the location, restrictions, and potential hazards present in the area.

As full build out shall occur over a period of 10-20 years and the proposed materials and reef configuration may change subject to advances in technology and research, DAR shall submit pre-deployment notifications for subsequent reef increments to the Department of the Army, State Department of Health, the Office of Conservation and Coastal Lands and other government agencies subject to review.

RECOMMENDATION:

- A. Staff recommends that the Board of Land and Natural Resources APPROVE the amendment of Condition #17 of CDUP OA-2670 to read as follows:

The applicant shall comply with the terms of the Memorandum of Agreement among HASEKO (Ewa), Inc., the U.S. Army Corps of Engineers, Pacific Ocean Division,

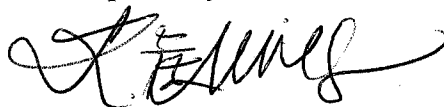
and the State of Hawaii Department of Land and Natural Resources Division of Aquatic Resources, effective October 21, 2004, which establishes certain commitments upon the parties relating to the construction of an artificial reef to offset impacts to coral-reef habitat associated with construction of the entrance channel to the marina.

B. Staff recommends that the Board of Land and Natural Resources APPROVE this application for the establishment of the Kalaeloa Artificial Reef and the emplacement of the first increment of reef-building material located offshore of Ewa, Oahu subject to the following conditions:

1. The Applicant shall comply with all applicable statutes, ordinances, rules, regulations, and conditions of the Federal, State, and County governments, and applicable parts of the Hawaii Administrative Rules, Chapter 13-5;
2. The Applicant shall obtain a land disposition from the Land Division for the project site;
3. The Applicant shall comply with all applicable Department of Health administrative rules;
4. Before proceeding with any work authorized by the Board, the Applicant shall submit two (2) copies of the construction plans and specifications to the Chairperson or his authorized representative for approval for consistency with the conditions of the permit and the declarations set forth in the permit application. One copy will be returned to the applicant. Plan approval by the Chairperson does not constitute approval required from other agencies;
5. Any work or construction to be done on the submerged land shall be initiated within one year of the approval of such use, in accordance with construction plans that have been signed by the Chairperson, and, unless otherwise authorized, shall be completed within twenty (20) years of the approval. The Applicant shall notify the Department in writing when construction activity is initiated and when it is completed;
6. The Applicant shall submit plans for each subsequent reef increment to the Office of Conservation and Coastal Lands for approval prior to each deployment;
7. All representations relative to mitigation set forth in the accepted environmental impact statement for the proposed use are incorporated as conditions of the permit;
8. The Applicant understands and agrees that this permit does not convey any vested rights or exclusive privilege;

9. In issuing this permit, the Department and Board have relied on the information and data that the Applicant has provided in connection with this permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete or inaccurate, this permit may be modified, suspended or revoked, in whole or in part, and/or the Department may, in addition, institute appropriate legal proceedings;
10. Where any interference, nuisance, or harm may be caused, or hazard established by the use, the Applicant shall be required to take the measures to minimize or eliminate the interference, nuisance, harm, or hazard;
11. Anchoring shall be prohibited at the proposed artificial reef;
12. The Applicant shall notify potential users of the artificial reef of the location, restrictions, and potential hazards present in the area;
13. The Applicant shall submit pre-deployment notifications for subsequent reef increments to the Department of the Army, the State Department of Health, the Office of Conservation and Coastal Lands and other government agencies for review;
14. Should historic remains be encountered during construction activities, work shall cease immediately in the vicinity of the find, and the find shall be protected from further damage;
15. Other terms and conditions as may be prescribed by the Chairperson; and
16. Failure to comply with any of these conditions shall render this Conservation District Use Permit null and void.

Respectfully submitted,



K. Tiger Mills, Staff Planner
Office of Conservation and Coastal Lands

Approved for submittal:



LAURA H. THIELEN, Chairperson
Board of Land and Natural Resources

- I. With the conditions imposed by the Board of Land and Natural Resources in its Decision and Order herein, the entrance channel at Honouliuli Ewa, Oahu, is in compliance with the provisions of Chapters 183 and 205, Hawaii Revised Statutes, and Title 13, Chapter 2, Hawaii Administrative Rules.
- J. Any finding of fact herein contained in this decision and order which is determined to be more properly deemed a conclusion of law, is hereby incorporated in this part and made a conclusion of law herein.
- K. Because fishing is a traditional and customary practice of native Hawaiians and others along the shoreline adjoining Haseko's proposed Ewa Marina Project and in the waters where Haseko proposes to build the entrance channel to its proposed marina, Native Hawaiians, including Howell and her family, who engage in such activities are exercising rights "established by Hawaiian usage," § 1-1, H.R.S., see Pele Defense v. Paty, 73 Haw. 578 (1992), and protected under Haw. Const., Art XII, § 7. [SEBO proposed COL 7.]
- L. The BLNR has reviewed the evidence presented at the hearing pertaining to the issue of traditional and customary native Hawaiian rights exercised in the project area including the environmental effects the project will have on those rights. The Board finds that those rights have been sufficiently protected with the issuance of this conditional approval.



IV. DECISION AND ORDER

Based on the Findings of Fact and Conclusions of Law stated herein, IT IS THE DECISION of the Board of Land and Natural Resources to conditionally grant the applicant a Conservation District Use Permit for a marina entrance channel at Honouliuli, Ewa, Oahu, subject to the following conditions:

STANDARD CONDITIONS

1. The applicant shall comply with all applicable statutes, ordinances, rules and regulations of the Federal, State and County governments and applicable parts of Section 13-2-21, Hawaii Administrative Rules, as amended;
2. The applicant, its successors and assigns, shall indemnify and hold the State of Hawaii harmless from and against any loss, liability, claim or demand for property damage, personal injury and death arising out of any act or omission of the applicant, its successors, assigns, officers,

employees, contractors and agents under this permit or relating to or connected with the granting of this permit;

3. Since this approval is for use of conservation lands only, the applicant shall obtain appropriate authorizations through the Division of Land Management, State Department of Land and Natural Resources for the disposition of State land[s] in compliance with Chapter 171, HRS;
4. That in issuing this permit, the Department and Board have relied on the information and data which the applicant has provided in connection with the permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete or inaccurate, this permit may be modified, suspended or revoked, in whole or in part, and/or the Department may, in addition, institute appropriate legal proceedings;
5. That all representation relative to mitigation set forth in the accepted Environmental Impact Statement for this proposed use are hereby incorporated as conditions of this approval;
6. That failure to comply with any of these conditions shall render this Conservation District Land Use application null and void;
7. Other terms and conditions as prescribed by the Chairperson consistent with this Findings of Fact, Conclusions of Law, Decision and Order,
8. That the applicant understands and agrees that this permit does not convey any vested right(s) or exclusive privilege.
9. That the applicant notify the Department in writing when construction activity is initiated and when it is completed.

MODIFIED STANDARD CONDITIONS

10. The applicant shall comply with all applicable Department of Health Administrative Rules; including the Section 401 Water Quality Certification conditions; all applicable conditions of the U.S. Army Corps of Engineers Permit No. PODCO 2117 dated June 28, 1993, and applicable conditions of the Unilateral Agreement Declaration for Conditional Zoning;
11. The applicant shall provide documentation (i.e. book/page or document number) that this approval has been placed in recordable form as part of the deed instrument for TMK: 9-1-12: 6, prior to submission for approval

of construction plans;

12. Before proceeding with any work authorized by the Board, the applicant shall submit four (4) copies of the construction plans and specifications to the Chairperson or his authorized representative for approval for consistency with the conditions of the permit and the declarations set forth in the permit application. Three (3) of the copies will be returned to the applicant. The construction plans shall show the alternate public access routes to be used during construction. Plan approval by the Chairperson does not infer approval required of other agencies. Compliance with Condition 1 remains the responsibility of the applicant;
13. The evidence presented herein supports approval of Standard Condition 13-2-21(a), HAR, criteria met under 13-2-21(c)(1-4), HAR: Any work or construction to be done on the land shall be initiated within five years of the approval of such use, and all work and construction must be completed within ten years of the approval of such use;
14. **CONSTRUCTION RELATED**
 - A. The applicant shall provide written advance-notice to the U.S. Coast Guard at least 30 days prior to any dredging or blasting;
 - B. Prior to the submission for approval of construction plans, the applicant shall furnish the Department's Division of Aquatic Resources with a blasting plan for review and approval, if blasting is deemed necessary;
 - C. Existing public access to and along the shoreline shall not be restricted during construction except as necessary to ensure safety. (p. 40 CDUA, p. VI-3 FEIS) In the event that public access is restricted, the applicant shall provide alternate public access routes;
 - D. The applicant shall leave a berm along the shoreline separating the marina entrance channel and the marina itself. The berm shall remain in place until the entire marina is completed before being removed;
 - E. During construction, fishing along the seaward shoreline shall remain open as long as possible. The shoreline berm separating the marina from the ocean shall be wide enough to accommodate both construction operations and public access for fishing;

- F. Prior to connecting the marina waterways to the ocean, the applicant shall remove the collected silt and sediment within the marina;
- G. The applicant shall implement erosion control measures during construction, such as silt curtains;
- H. If applicable, the applicant shall construct the causeway or trestle within the channel boundaries;
- I. Disposal of excavated material shall be in compliance with the U.S. Corps of Engineers Department of the Army Permit;

15. **PUBLIC ACCESS/FACILITIES RELATED**

- A. Prior to breaching the shoreline to connect the marina with the ocean, the applicant shall construct piers that provide public fishing access along the banks of the marina. The piers shall be designed to accommodate the physically challenged;
- B. Should the applicant convey to the City and County of Honolulu (City) the approximate nine acres of beachfront land adjacent to Oneula Beach Park identified in the City's Ordinance 93-94 ("Unilateral Agreement and Declaration for Conditional Zoning") that prior to breaching the shoreline to connect the marina with the ocean, the applicant shall implement the "Oneula Improvements;"
- C. To protect the traditional and customary rights exercised in the project area, during construction of the marina, access to the shoreline fronting the project area must be permitted for the reasonable exercise of traditional and customary practices of native Hawaiians to the extent feasible and safe;
- D. After completion of the project, the applicant will provide, in addition to any other access for traditional and customary practices that may be established in any subsequent or future proceeding or by agreement, public access for the purpose of permitting the reasonable exercise of traditional and customary practices of native Hawaiians, to include the following:
 - 1. Dedication of approximately nine acres of beachfront land adjacent to Oneula Beach Park identified in the City's Ordinance 93-94 ("Unilateral Agreement and Declaration

for Conditional Zoning"), or alternatively, dedication to a perpendicular access to the shoreline which shall be no closer than 600 feet from the eastern boundary of Oneula Beach Park;

2. Dedication of the boat launching complex to the State of Hawaii as set forth in paragraph 15.F., below; and
 3. Shoreline access on either side of the marina entrance channel as set forth in paragraph 15.G., below.
- E. The applicant shall make at least fifty percent of the boat slips available to the general public at reasonable market rates;
- F. The boat launching ramp complex shall be completed in a timely manner following breakout to the ocean. The applicant shall dedicate the launching ramp complex to the State of Hawaii. The launching ramp complex shall be operated and maintained by the State or others as a State launching facility. Subject to applicable laws, the State may at any time enter into a joint venture or operating contract with the Applicant for the operation and maintenance of the boat launching ramp complex as a State launching facility. In addition to the seven launching ramps, the launching ramp complex shall include: about 150 associated trailer parking, public parking, boat wash down areas, restrooms and outside showers. The launching ramp complex shall be open and available 24 hours a day;
- G. The applicant shall provide shoreline access with nearby restrooms, showers, and parking areas free-of-charge on each side of the channel;
- H. The applicant shall provide public access to and around the entire marina facilities through a series of internal vehicular, bicycle and pedestrian ways. The pedestrian pathway around the edge of the marina shall be open and available to the public free of charge at all times, excepting during the actual construction of the project and upon a determination by the Department or other governmental agency that if it is unsafe to permit public access to that area;
- I. The applicant shall provide well-signed and lit public pedestrian access around the edge of the marina; including a provision for diverting pedestrian access around certain facilities, such as boat

haul-out or repair facilities, where heavy equipment operation may pose a safety hazard;

- J. The marina waterway shall be open free of charge to navigational access by the general public in perpetuity;
- K. The applicant shall provide sewage pump-out facilities for boats using the marina;

16. MONITORING REPORT

- A. The applicant shall submit to the Department's Division of Aquatic Resources all monitoring reports for water quality turtle, marine resources inventory, etc.;
- B. The applicant shall conduct an additional marine biota survey three years following the breakthrough connecting the channel with the marina basin and submit the results to the Department. The survey shall be conducted along the same transects used to establish baseline data prior to construction;

OTHER/GENERAL

- 17. The applicant shall construct and maintain for a specified period of time as determined by the Department, an artificial reef subject to review and approval by the Department. Prior to the construction of an artificial reef, the applicant shall apply for, and obtain a Conservation District Use Permit;
- 18. The applicant shall be responsible for the maintenance dredging of the entrance channel to its approved depth and in accordance with the U.S. Corps of Engineers' Department of the Army Permit;
- 19. The applicant shall notify the U.S. Coast Guard of its intention for marking the entrance channel and marina with navigational aids;
- 20. The applicant shall obtain appropriate approval from the Commission on Water Resource Management relative to the caprock aquifer issues;
- 21. The applicant shall be responsible for removing any noxious aggregations of algae washed up along the shoreline fronting the applicant's property;
- 22. The applicant shall provide fully developed and Government approved plans for constructing a flood drainage system through the marina

development in concert with the drainage plans for the upper development of Kapolei, Ewa Villages, other developments in the Kaloi Gulch watershed;

23. The applicant shall submit a comprehensive Maintenance and Management Plan for the Marina and its operations to the Department for review and approval prior to opening the marina for vessel use. The plan should be designed to protect water quality of the marina and ocean waters, among other things, and shall include, but not be limited to the following:
- Elements identified on pages 11, 12, and 41 in the permit application;
 - Enforcement;
 - Responsibilities for compliance of the plan clearly defined;
 - Procedures for coordinating with the U.S. Customs, the U.S. and State Department of Agriculture, the Department of Health and other federal and state agencies having an interest in processing foreign arrivals;
24. Prior to the submission for approval of construction plans, the applicant shall submit a site plan of the marina area to the Department for review and approval. The site plan shall include, but not be limited to the following information:
- The location of the artificial reef;
 - Identify areas around the both sides of the marina entrance and periphery of the marina that will be open to the general public (including the physically challenged) for fishing. Identification should include: specific areas or number of areas and fishing piers, a description of these areas (i.e. entrance channel boundaries, open spaces, etc.), and distances to these fishing areas from planned parking areas;
 - Oneula Beach Park and the nine-acre expansion area;
 - Identify the setback areas required by the City Council's Resolution 93-286 granting a Special Management Area Use Permit and Shoreline Set Back Variance, Ordinance No. 93-94 Unilateral Agreement and Declaration for Conditional

**Zoning, and the Urban Design Plan approved by the
Department of Land Utilization;**

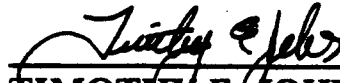
- **Public boat slips;**
- **Launching ramp complex;**
- **Sewage pumpout facilities;**
- **Public access (pedestrian, bicycle, and vehicular) to and around the edge of the marina, signs, and lighting;**
- **Public parking, restrooms and showers;**

25. **Live-aboards shall be prohibited in the Marina;**
26. **The applicant shall comply with the provisions contained in the Memorandum of Agreement (MOA) among the applicant, the Hawaii State Historic Preservation Division, the U.S. Army Corps of Engineers, the Advisory Council of Historic Preservation, and the Office of Hawaiian Affairs regarding the treatment of historic sites on the project site;**
27. **The applicant shall submit a copy of the "Best Management Practices" plan required by the State Department of Health pursuant to Section 401 Water Quality Certification to the Department for review and comment;**
28. **To the extent practicable, the applicant shall preserve native strand vegetation and/or use xeriphetic native plant species for landscaping of coastal areas;**
29. **The applicant shall provide educational information on the safe use of marinas and pollution control, in the form of brochures, signs, video, and posters;**
30. **The applicant shall submit an annual report to the Department which shall include the status of compliance of the permit conditions and implementation of the land use;**
31. **That the Board reserves the right to amend these conditions and the right to stop work should any unanticipated and/or unreasonable adverse ecological results occur;**
32. **Implementation of the project shall be in general conformity with the representations made in the application on file with the Department and**

at the contested case hearing. Any substantial change in the size or nature of the marina as determined by the Department shall require an amendment to the permit. Any change that the Department determines to be incidental, shall be permitted upon review and approval of the Chairperson.

- 33. The BLNR shall retain continuing jurisdiction over this permit and in the event of any violation or non-compliance with an aforementioned condition (general or special) the BLNR may revoke this permit or take any appropriate action.**

DATED: APR 26 2000



TIMOTHY E. JOHNS

Chairperson, Board of Land and
Natural Resources

RECUSED

LYNN P. McCRORY

Member, Board of Land and
Natural Resources




WILLIAM KENNISON

Member, Board of Land and
Natural Resources

DID NOT PARTICIPATE IN
FURTHER HEARINGS

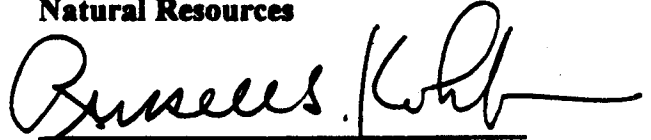
COLBERT M. MATSUMOTO

Member, Board of Land and
Natural Resources



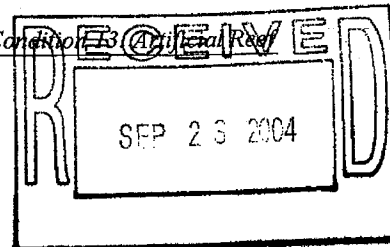
KATHRYN WHANG INOUE

Member, Board of Land and
Natural Resources



RUSSELL S. KOKUBUN

Member, Board of Land and
Natural Resources



MEMORANDUM OF AGREEMENT

Parties: HASEKO (Ewa), Inc.
U.S. Army Corps of Engineers, Pacific Ocean Division
Department of Land and Natural Resources, Division of Aquatic Resources

1. Purpose

The purpose of this Memorandum of Agreement (MOA) is to establish certain commitments binding upon HASEKO (Ewa), Inc. ("HASEKO"), the U.S. Army Corps of Engineers, Pacific Ocean Division ("COE"), and the State of Hawai'i Department of Land and Natural Resources Division of Aquatic Resources ("DLNR/DAR"), related to Special Condition #13 of HASEKO's Department of the Army Permit (PODCO 2117, issued on June 28, 1993). Special Condition #13 requires HASEKO to construct an artificial reef in the vicinity of its Ocean Pointe Marina (previously known as the "Ewa Marina") development to offset impacts to coral-reef habitat associated with construction of the entrance channel to the Marina.

This MOA establishes a plan to satisfy Special Condition #13 (i.e. enhancement of coral-reef habitat in the area) while taking into account recent improvement in scientific understanding concerning the optimum size of artificial reef habitat. Under the terms of the MOA, discussed in more detail below, HASEKO will support the DLNR/DAR application for a Conservation District Use Permit (CDUP) for a much larger artificial reef (on the order of 100 acres of surface area) than required by Special Condition #13 and specifies the financial support that HASEKO will provide for the emplacement of the first increment of the reef construction. DLNR/DAR will be responsible for the design, construction, and long-term maintenance of the artificial reef. Should HASEKO be unable, despite a good faith effort, to obtain the CDUP or other approvals needed to construct the artificial reef, HASEKO will provide DLNR/DAR with the funds committed to the First Increment of Reef Construction to support the DLNR/DAR artificial reef program at another location.

2. Definitions

For the purposes of this MOA, the following terms have the meanings indicated below:

"Board" means the Board of Land and Natural Resources, State of Hawai'i.

"CDUP" means State of Hawai'i Conservation District Use Permit for the proposed artificial reef.

"COE" means the U.S. Army Corps of Engineers, Pacific Ocean Division.

"DLNR/DAR" means the State of Hawai'i Department of Land and Natural Resources Division of Aquatic Resources.

"First Increment of Reef Construction" means the placement of materials in the Permitted Area under the direction of DLNR/DAR and funded by HASEKO to a maximum level of \$150,000 and within a time of less than 12 months after the acquisition of all required approvals.

"HASEKO" means HASEKO (Ewa), Inc., its employees, agents, representatives, designees, and its successors and assigns.

"Permitted Area" means the location of the proposed artificial reef identified in the CDUP application.

"Parties" means HASEKO, COE, and DLNR/DAR.

"U.S. Department of the Army Permit" means a Clean Water Act Section 404 permit for the proposed artificial reef.

3. Background

Special Condition #13 to HASEKO's Department of the Army Permit (PODCO 2117) is reproduced in italics below:

13. Artificial Reef:

a. The permittee shall construct an artificial reef in the vicinity of an existing sunken barge, identified as Site No. 4 in the Ewa Marina Sea Turtle Population Surveys and shown on sheet 10 of 10 of this permit, or at a suitable site along the Leeward Coast between Ewa Beach and Barbers Point Naval Air Station, which meets the following site selection and design criteria:

- (1) relatively flat hard bottom;*
- (2) water depths from 60-90 feet;*
- (3) location outside lanes of shipping and pleasure craft traffic;*
- (4) location devoid of live coral;*
- (5) location in a benthic community with appropriate forage for the fishes expected to be resident to the reef;*
- (6) materials and design which would provide a 40-year life expectancy and high stability as ascertained by a qualified engineer; and*
- (7) a navigation safety clearance of a minimum of 40 feet of water above the highest point of the artificial reef.*

b. Final site selection and/or detailed design will be made in consultation with the National Marine Fisheries Service, subject to the approval of the State Department of Land and Natural Resources and the State Department of Health. A plan for construction shall be submitted within 6 months of issuance of this permit. Construction of the reef shall be completed prior to initiation of the entrance channel excavation.

c. The permittee shall notify National Ocean Service, Source Data Unit (N/CG2211), Mapping and Charting Branch, 130 East-West Highway, Station 7317, Silver Spring, MD 20910-3233, and the Corps of Engineers in writing, at least six months prior to construction and upon completion of the reef construction. The notification of

completion must include a drawing which certifies the location and configuration of the deployed reef.

d. The permittee will be responsible for maintaining the vertical relief of the structure in substantial conformance with the approved design for 40 years.

e. In the event that, despite the permittee's best efforts, the required local approvals are denied, the permittee may enter into an alternative agreement with the State Department of Land and Natural Resources for participation in their ongoing artificial reef construction or other habitat enhancement/replacement program. Participation may be in the form of materials, moneys, research studies, or other equivalent commitment, provided that such participation directly benefits marine habitat along the Leeward Coast and substantially meets the site selection and design criteria in paragraph a. of this condition. Under this alternative, a copy of such agreement must be provided to the Corps prior to initiation of marina entrance channel construction.

The basis for the required size of the artificial reef that HASEKO must construct is contained in Item 25 of the Army Record of Decision for the permit, which reads:

(25) Special aquatic sites--Loss of coral reef: As noted earlier, excavation of the 400-foot-wide, 3,000-foot-long entrance channel constitutes the only physical alteration beyond the existing shoreline. Marine studies referenced and appended to the Final EIS show that the coral coverage over the approximately 28-acre reef area to be dredged ranges from 0.1% in the shallow intertidal area to 10% at the seaward end of the entrance channel, with an average of 4% coral coverage over the entire channel alignment.

In the years since Special Condition #13 was established, the scientific understanding of artificial reefs has moved forward significantly, and most scientists currently believe that the size of the artificial reef that would satisfy the requirements of this Special Condition (which would have a surface area of approximately 1.1 acres) would not be sufficient to create useful coral-reef habitat. Rather, a structure or aggregate of seafloor structures with a total surface area of this size would function primarily as a fish aggregation device. As such, it would tend to concentrate fish near the structures without providing productive habitat for community growth. Staff scientists in DLNR/DAR believe that this situation would lead to greater vulnerability of reef fish to over fishing, due to the concentration of fish at a site readily accessible to fishermen, with no enhancement of fish reproductive rates or growth.

As noted above, DLNR/DAR believes that, while creation of the specified area of artificial reef (4% of 28 acres, or about 1.1 acres) is sufficient to offset the impact to coral reef caused by the marina entrance channel, it would be undesirable if the area were to be provided as a stand-alone entity. For this reason, the Parties agree that it would not be possible to obtain the requisite permits for such an artificial reef. Thus, HASEKO is committed, through this MOA, to an alternative agreement, consistent with Item e of Special Condition #13. The following section describes the essential characteristics of this agreement.

4. Applications for a Large Artificial Reef in the Ewa Offshore Environment

The Parties agree to undertake the following tasks necessary for the establishment of an approved artificial reef site and constructing the first increment of reef within the Permitted

Area. HASEKO will contract with Planning Solutions, Inc. (subsequently referred to as "the Consultant") to complete Tasks 4a and 4b, described below.

a. Site Identification

Using the general criteria described in Special Condition #13, Items a(1) to a(5), and guidance from the other Parties, the Consultant will identify an appropriate seafloor area along the O'ahu Leeward Coast for the artificial reef structures. The Consultant will perform the necessary site survey work to select the site and to ensure that these criteria are met for the selected site. The Consultant, in collaboration with DLNR/DAR staff, will identify a target seafloor area of approximately 100 acres to be designated for the future construction of artificial reef structures.

b. Site Permitting

The Consultant will prepare the necessary applications and support documentation for permitting the artificial reef site. DLNR/DAR commits to be the applicant for these permitting actions and the Proposing Agency for the environmental documentation. The Parties anticipate that permitting will entail preparation of a CDUP application. Support documentation will include an Environmental Assessment or Environmental Impact Statement, consistent with Hawai'i Revised Statutes, Chapter 343. If it is determined that the existing Department of the Army Permit for the Ocean Pointe project does not provide completely for the artificial reef, then the Consultant will prepare a Department of the Army Permit Application as well and will prepare the EA/EIS as a joint Chapter 343/National Environmental Policy Act (NEPA) document. The Parties agree that if the CDUP or other required permits become the subject of a contested case hearing or legal challenge or are denied, then the resulting delay would make it impractical to complete the permitting process within a reasonable time frame. If this occurs, then HASEKO will provide funds to be used by DLNR/DAR to support its artificial reef program at some other site as provided for in Section 4.c of this MOA. HASEKO's obligations under this MOA shall then be considered fulfilled, and it shall be relieved of any further obligation under Special Condition #13.

c. First Increment of Reef Construction

The permit applications and environmental documentation will be based on concept-level prototypical designs agreed to by the Parties. HASEKO will be responsible for preparing these plans in consultation with DLNR/DAR, which shall have final approval authority for the concept plans. DLNR/DAR will be responsible for the final design of artificial reef structures within the approved site, including the First Increment of Reef Construction.

HASEKO will provide funds for the construction of the First Increment of Reef Construction. This support will consist, at DLNR/DAR's discretion, of the direct purchase of services and materials by HASEKO as specified by DLNR/DAR or the transfer of funds to DLNR/DAR to be used for the purchase of those services and materials. In either case these services and materials would be only for the purpose of First Increment of Reef Construction. HASEKO commits up to \$150,000.00 for this purpose.

Because Special Condition #13 must be satisfied before HASEKO is able to construct the entrance channel to its marina, the Parties agree that time is of the essence. Should DLNR/DAR be unable to complete the First Increment of Reef Construction within a time of less than 12

months after the acquisition of all required approvals, the Parties agree that the funds allocated for this purpose will be placed in trust for future use in constructing the artificial reef.

5. Fulfillment of Special Condition #13

All Parties agree that completion of the tasks described in item 4 above will satisfy the requirements of Special Condition #13 unless the permit applications are rejected as incomplete or environmental documentation is found to be inadequate. In such case, HASEKO will be responsible for the additional work needed to complete an acceptable application and/or environmental documentation.

6. Successors and Assigns

The provisions of this MOA shall apply to and be binding upon the Parties, and their respective employees, agents, successors and assigns.

7. Notices

All notices required by this MOA shall be made to the following representatives of the Parties:

HASEKO: Raymond Kanna, Project Manager, HASEKO (Ewa), Inc., 91-1001 Kaimalie Street Suite 205, 'Ewa Beach, HI 96706

COE: George Young, P.E., Chief, Regulatory Branch, U.S. Army Engineer District, Honolulu, Bldg. 230, Ft. Shafter, Honolulu, HI 96858-5440

DLNR/DAR: Peter T. Young, Chairperson, P.O. Box 621, Honolulu, HI 96809

8. Amendments

This MOA may be revised, modified or amended by the Parties to meet the purposes of Special Condition #13. Any revision, modification or amendment must be in writing and signed by all the parties to become effective.

9. Effective Date

This MOA shall take effect immediately when signed by all the Parties and shall remain in force until 30 days after the later of:

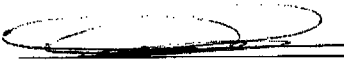
(a) State Board of Land and Natural Resources final action on the CDUP application and supporting Chapter 343, Hawai'i Revised Statutes environmental impact documentation and

(b) Corps of Engineers final action on the Department of the Army Permit application.

HASEKO will use its best efforts to complete and submit the required CDUA and supporting environmental documentation no later than June 30, 2005, allowing the Board to act by December 31, 2005.

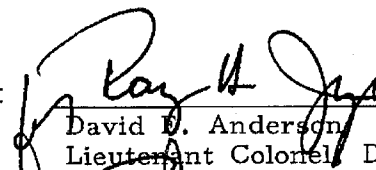
HASEKO

Date: 10/7/04

By: 
Toru Nagayama
President

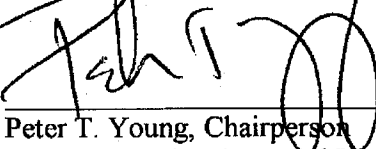
COE

Date: 10/21/04

By: 
David B. Anderson
Lieutenant Colonel, District Engineer

DLNR/DAR

Date: 9/22/04

By: 
Peter T. Young, Chairperson
Board of Land and Natural Resources

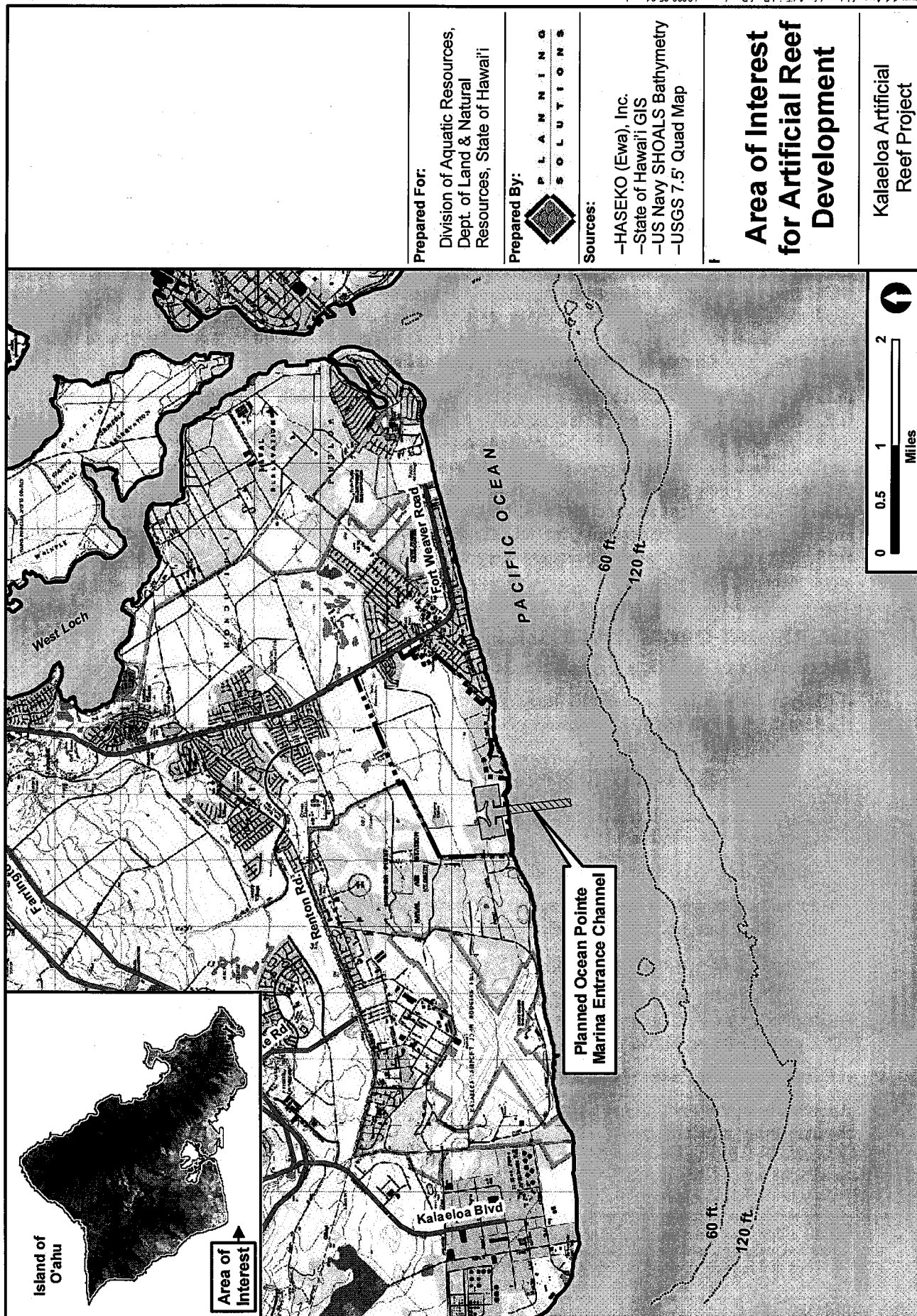
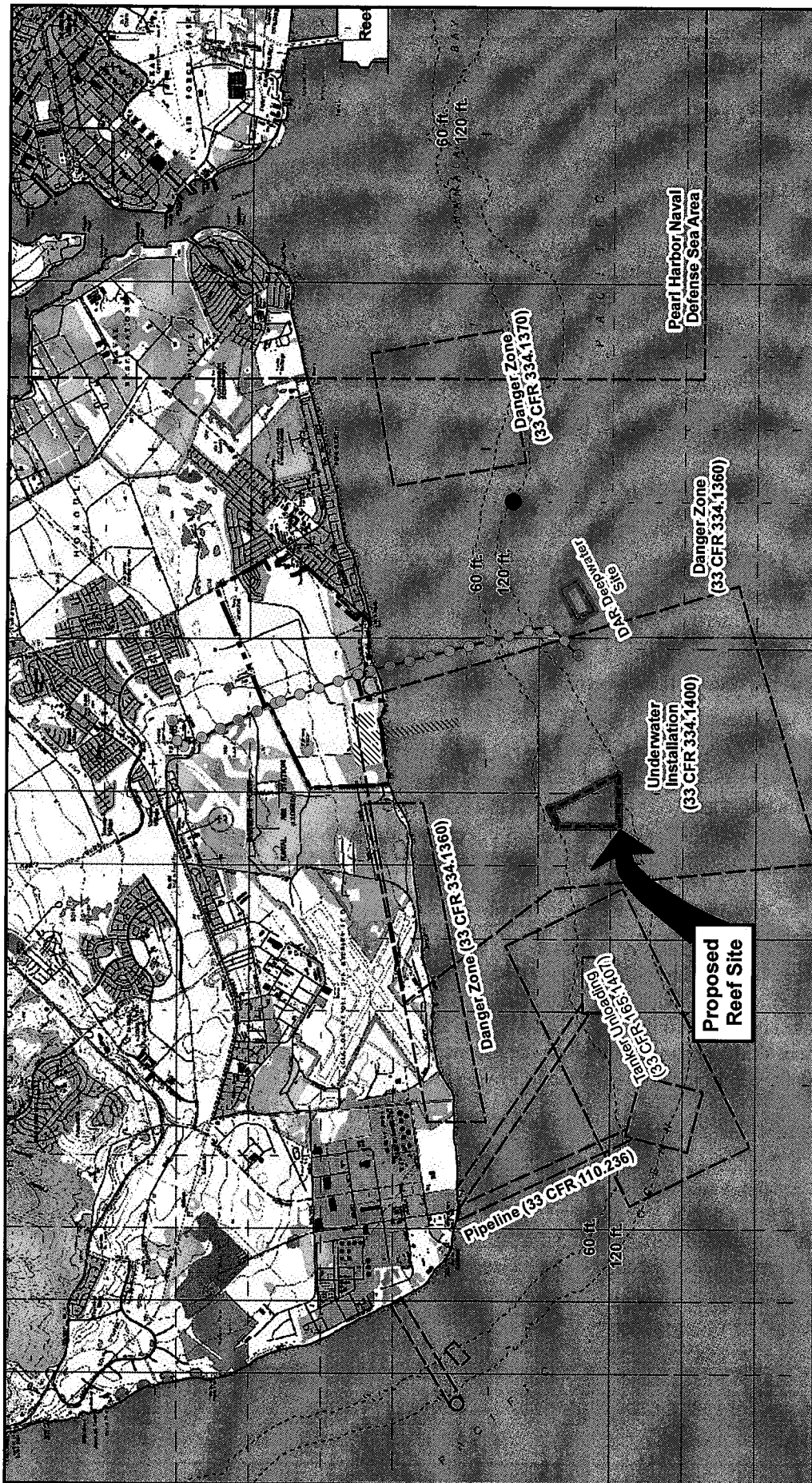
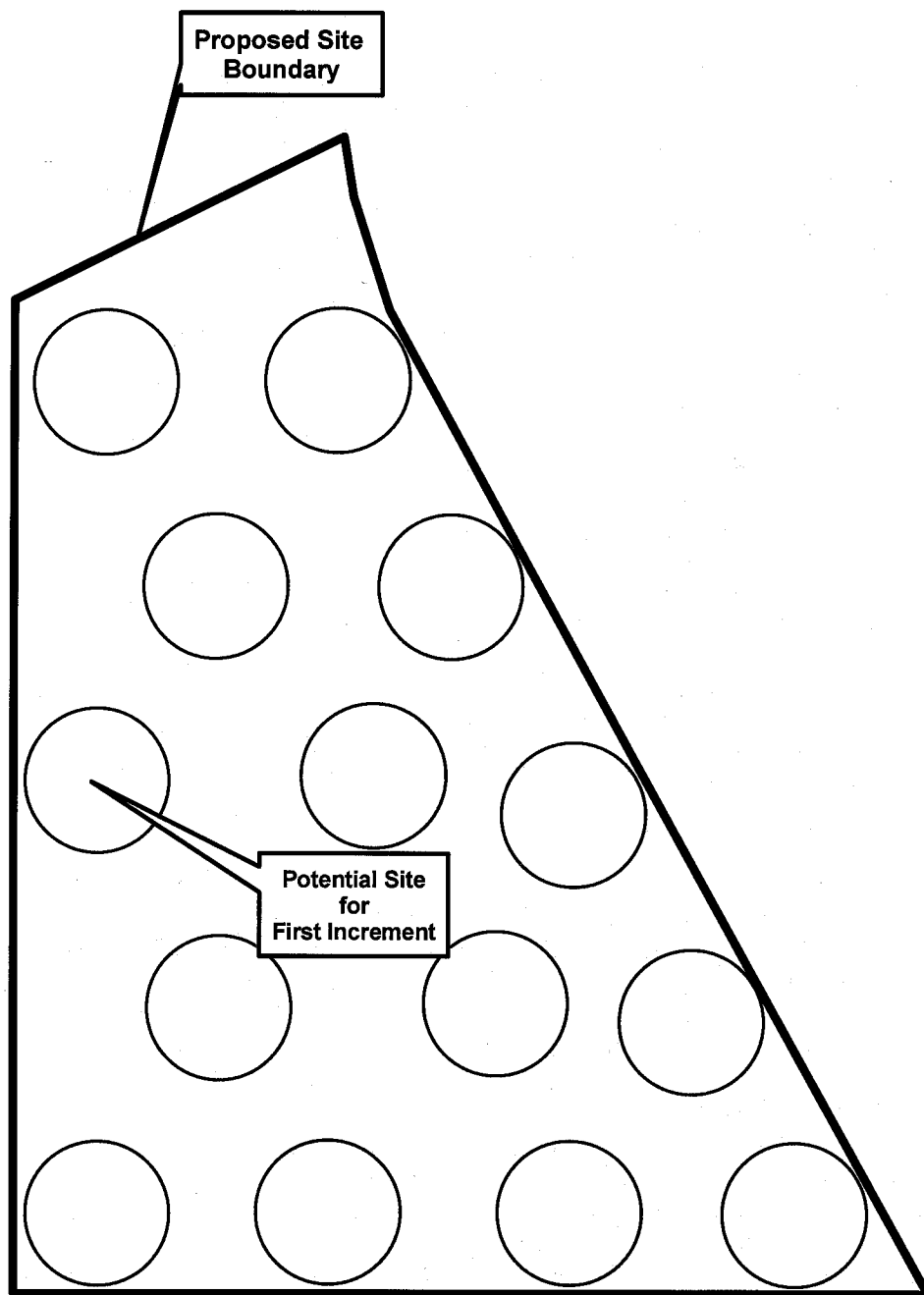


EXHIBIT 4



Prepared For: Division of Aquatic Resources Dept. of Land & Natural Resources	Legend: 60 & 120 ft. Depth Contours ● Cates Aquaculture Facility ○ Hono'uliuli Waste Water Treatment Plant Outfall	Proposed Marina & Entrance Channel Restricted Areas 	<h2>Proposed Artificial Reef Site</h2>
Prepared By: 	0 0.5 1 2 Miles	0 0.5 1 2 Miles	Kalaeloa Artificial Reef Project
Sources: -HASEKO (Ewa), Inc. -USGS 7.5' Quad Maps			



Prepared For:

Division of Aquatic Resources; Dept.
of Land & Natural Resources

Prepared By:



**PLANNING
SOLUTIONS**

Sources:

-HASEKO Hawaii, Inc.
-US Navy SHOALS Bathymetry

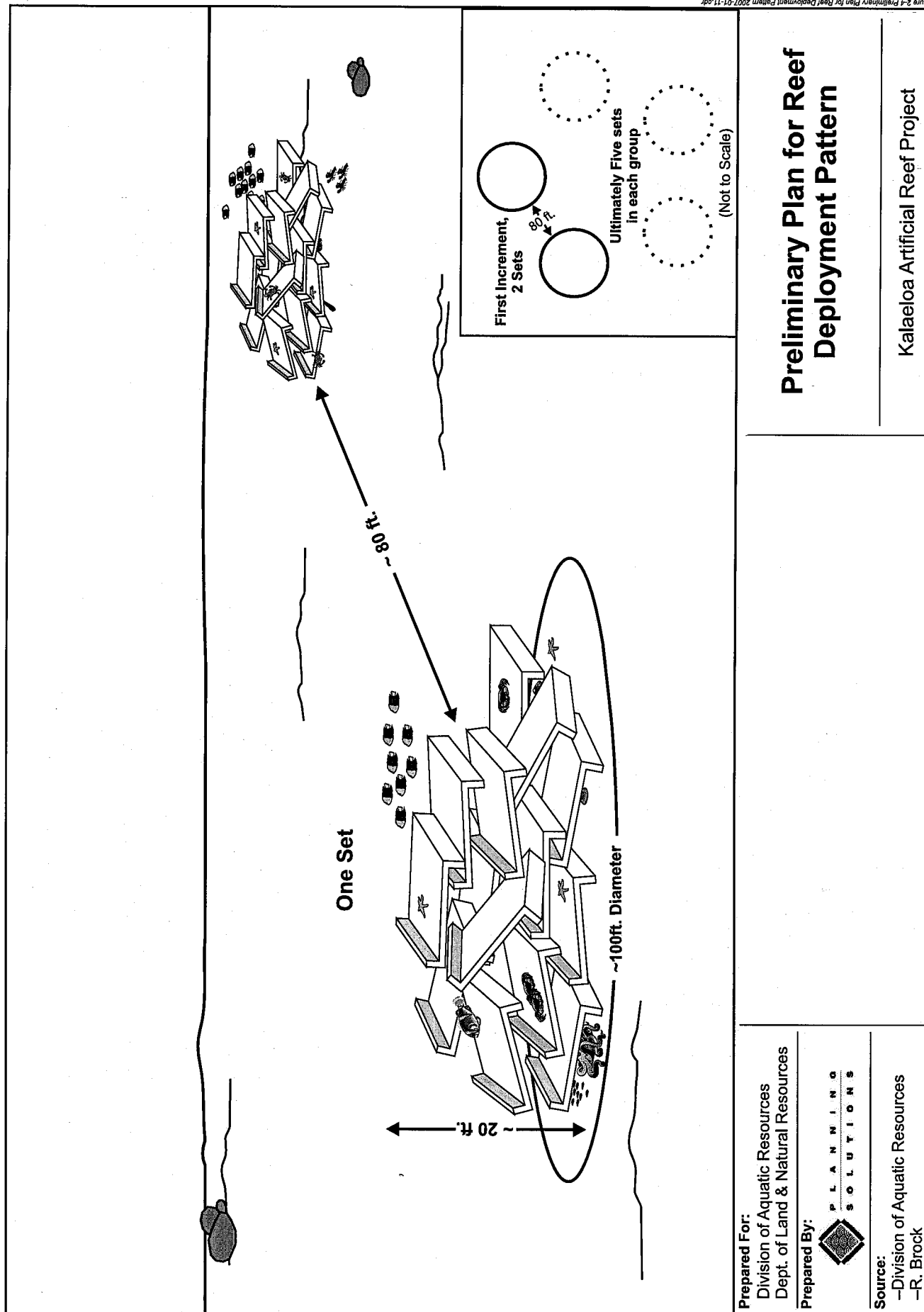
Note: Circles (400-ft. dia.) denote tentative
containing areas for groups of 5 reef sets

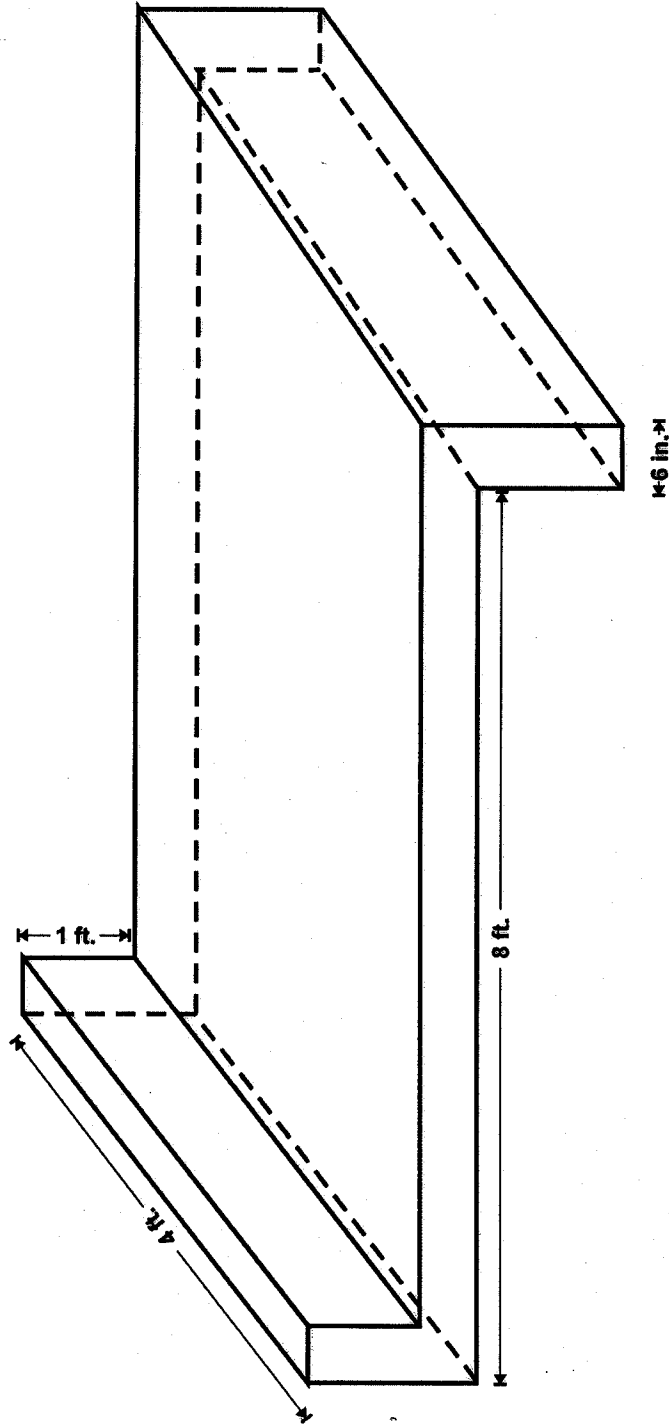
**Theoretical Full
Reef Build-out**

Kalaeloa Artificial Reef Project

Figure 2-5 Possible Configurations of Full Build-out 2007-10-04.mxd

EXHIBIT 6





The Z-Block

Kalaeloa Artificial Reef Project

Prepared For:
Division of Aquatic Resources
Dept. of Land & Natural Resources

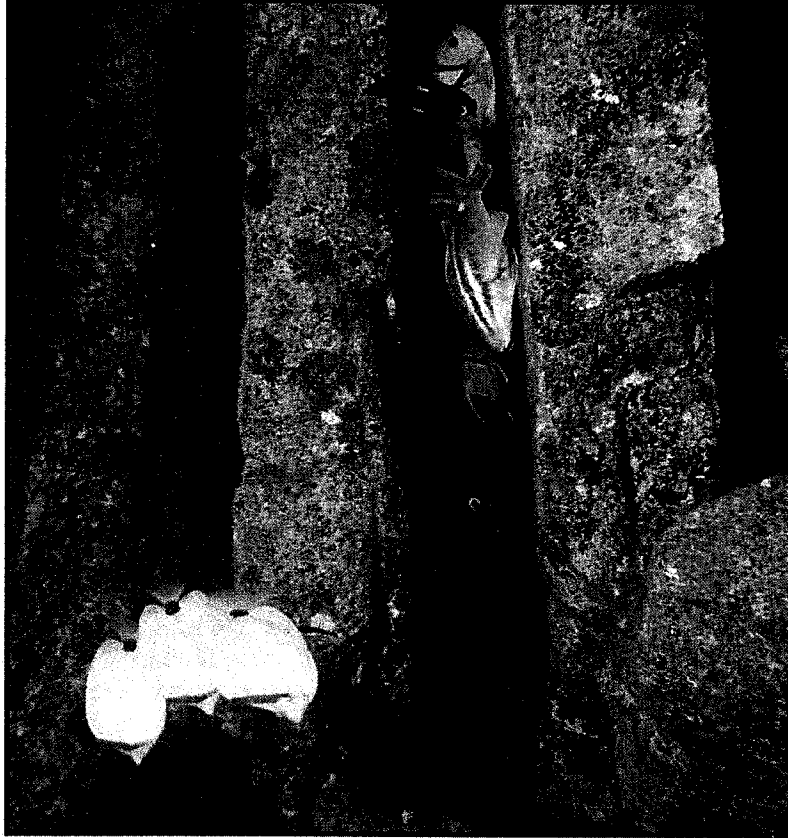
Prepared By:

PLANNING
SOLUTIONS

Source:
Division of Aquatic Resources (1991)



A. Configuration of deployed Z-Blocks.



B. Example of artificial habitat created with deployed Z-Blocks.

Prepared For:

Division of Aquatic Resources
Dept. of Land & Natural Resources

Prepared By:



P L A N N I N G
S O L U T I O N S

Source:

Division of Aquatic Resources
Dept. of Land & Natural Resources

Artificial Reef Constructed From Z Blocks

Kalaeloa Artificial Reef Project

Maunaloa Artificial Reef
Oahu